SOLUTIONS FOR WORKPLACE CHANGE:

Toward a New Ontario Research Program for Workplace Health, Safety, and Compensation

Proposal to the Board of Directors of the
Workers' Compensation Board by the
Task Force on Research Strategy

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Solutions for Workplace Change
WCB Research Task Force Proposal

1. Introduction

What is the best way to manage low back pain? What are the management practices of companies with outstanding health and safety performance? How can repetitive strain injuries among computer operators be prevented? What are the health and safety risks of working with machine cutting fluids?

These are examples of questions that research can help answer. Ontario needs quality research to help find effective ways to prevent workplace injury and disease, to treat workers if they become injured or ill, to compensate them fairly, and to help them return to work successfully.

For these reasons, the Minister of Labour has made a commitment to increase investment in workplace health, safety and compensation research. When introducing the proposed Workplace Safety and Insurance Act in the Ontario legislature in November 1996, the Minister said:

> The Ministry of Labour and the [Workers' Compensation] Board will set priorities for research into prevention, return to work, compensation and occupational disease issues. The Board will create new partnerships with the private sector, universities, research organizations such as the Institute for Work and Health and other bodies. Savings achieved through administrative streamlining of the health and safety system will be invested in research and used to lever additional funding from other sources.

Under the proposed new legislation, the Workers' Compensation Board (WCB) – to be renamed the Workplace Safety and Insurance Board – will assume responsibility for workplace health, safety and compensation research. To prepare for its new responsibilities, the Board of Directors of the WCB created a Research Task Force to advise it on a research vision, strategy and process. In this document, the Task Force will outline a proposed research vision and direction, intended to help the WCB establish a research program.

The Definition of Research

In its deliberations, the Task Force felt that it would be useful to define what it means by research. It agreed that for the purposes of this proposal, research would be defined as "systematic investigations into the causes of, and means of correction and prevention of, workplace health, safety, compensation and rehabilitation problems, ranging from fundamental research to the testing of solutions in the workplace."[1]

Overview of Proposal

The Task Force believes that in planning a research program, it is important to define the beliefs and principles upon which the program should be based, and to start with a vision of the ideal state of health, safety and compensation research in the future. This proposal, therefore, begins with a statement of beliefs and principles, and a vision of the future state of research in Ontario. It then describes the probable future environment in which research will function and the present state of research. Following are sections providing further details on what the Task Force envisions research will be, including the types of research that will be conducted and who will do it. The document concludes with proposed approaches for the management of the research process.

[1] The Task Force went on to characterize these investigations as "attempts by careful enquiry, experimentation, study, observation analysis and recording to discover new facts, knowledge and information, to develop new interpretations of facts, knowledge or information, or to discover new means of applying existing knowledge, relating to the causes of and means of correction of workplace health, safety, compensation and rehabilitation problems." This is an adaptation of wording found in draft 1997 federal legislation on the Canada Foundation for Innovation.

2. Beliefs and Principles

In developing this proposal, the Task Force identified a number of beliefs and principles that form the foundation for its vision. Key among these is a firm belief that decisions must be well-founded on evidence and that research is an important way of obtaining such evidence. Research must, therefore, be integral to developing policies and programs for workplace health, safety and compensation.

For research to be used in these ways, it must be well-planned and coordinated. This is achieved through a process of needs identification and priority-setting that involves the key stakeholders. The research strategy must be aimed primarily at generating solutions to workplace problems and improvements in health, safety, treatment, remediation, and return to work. This emphasis on application of research results, however, should not obscure the value of knowledge-based research.

The Task Force also noted that not all problems require further research to identify solutions. For example, sufficient research on a particular question may have already been done or is currently under way. In other cases, potential solutions may be evident, or it may be impossible to frame the problem in terms of a researchable question.

The Task Force believes in the importance of nurturing Ontario's research capacity. This is not only because it is important to ensure that Ontario researchers are capable of carrying out needed research, but, also because resident expertise within the province is needed to obtain reliable interpretation and advice on the implications of the international body of research. Development of Ontario's research capacity should build on existing strengths and capabilities. Over time, Ontario will further develop its own research specialties that will contribute to the international knowledge base.

The Task Force recognizes that good research cannot be conducted in isolation, but requires collaboration and networking, both within the province and with other jurisdictions. Ontario's contribution to the international body of research is key to participation in such networks.

Finally, the Task Force believes that the program must reflect a commitment to quality, credibility, and integrity in the conducting of research.

3. The Research Vision

The Task Force envisions a future in which research will make a difference – by being used to improve our efforts to prevent, compensate and treat workplace injury and illness, and to successfully return workers to productive work.

Research will be an important influence on policy and program decisions by the Ministry of Labour, the WCB and health and safety organizations like the Safe Workplace Associations (SWAs). These organizations will use the results of research to explore new solutions to health, safety and compensation problems, define policy, set standards, and design and deliver elective services and programs.

Employers and workers will also use research findings to develop and implement successful approaches to managing health and safety in the workplace, and to identify and control hazards.

Research will be an important element in the process of identifying needs, setting priorities and solving problems. It will address a spectrum of issues, including successful health and safety management approaches, hazard identification and control, occupational disease causation, surveillance and early detection of illness, treatment and remediation, compensation and return to work.

Through application of research, decisions will be more firmly grounded in fact and evidence, and have a more direct impact on working conditions and work practices. All interested parties will have a greater understanding of the importance and power of using research as a tool for change. They will also have access to reliable advice by experts in a variety of research disciplines, who can interpret and advise on the implications of international research in their respective fields.

To achieve this vision, Ontario's investment in research must increase substantially. The Task Force envisions that, in the future, Ontario's contribution to health, safety and compensation research will be on a par with the investment made by other developed jurisdictions that have similar populations.

Future research in Ontario, as envisioned by the Task Force, will be characterized by:

- participation by stakeholders in identifying needs, setting priorities, reviewing proposals, and disseminating results
- a well-planned research strategy to ensure that research support and funding match needs and priorities
- networks of researchers who collaborate and share information among themselves and with other jurisdictions
- a broad scope of topics, ranging from the fundamental to the applied
- development of Ontario research capacity through centres of excellence and education and training opportunities
- active dissemination of research results so that they are used to develop and implement innovative, practical solutions to workplace problems

These features will be described in greater detail in later sections of this paper. However, it is helpful to first have an understanding of the probable future environment in which research will operate, and of the present state of research in Ontario.

4. The Future Environment: Implications for Research in Health, Safety and Workers' Compensation

The environment in which research will be conducted, and questions to be researched in the next decade, will be shaped by challenges rooted in the economic and social changes of the late twentieth century. These challenges stem in large part from continued globalization which will increase competition, driving corporations to reduce costs and increase productivity. The focus of management on quality will increase and will influence health and safety programs. Continuing technological development may reduce some risks, but may also create new hazards and demands on the system.

Economic changes are already transforming workplaces and redefining working relationships. For example, relatively more members of the labour force are self-employed, working from their own homes and/or employed part-time. Small business accounts for a larger proportion of the work force. Service industries are becoming relatively more prominent compared with those in more traditional manufacturing and resource sectors. The workforce is aging and more women workers participate in the workforce than in the past. All these changes have implications for health, safety, compensation, treatment and rehabilitation that require investigation.

Increased awareness of health hazards and the work-relatedness of diseases will result in a greater focus on health and prevention program in the workplace. The growing use of information technologies will result in more world-wide dissemination of research information and increased awareness of health and safety issues. Strong research networks will be formed and new research techniques will be developed. There will be an international knowledge base on risk factors, measurement methods and risk reduction.

Governments, policy makers, and service providers will increasingly turn to research for information to help them develop effective policies and programs. They will be more discriminating in basing their decisions on well-researched evidence rather than conventional wisdom or historical practice. More effective administration and use of tax dollars will be expected of governments. As a result, public institutions will increase their scrutiny of research priorities and proposals before committing support.

5. Research in Ontario: The Present State

The Task Force recognizes that the new research program will build on a foundation of significant research related to health, safety and compensation that is currently conducted in the province. Inquiries by the Task Force indicate that most Ontario universities and some research institutions, in particular the Institute for Work and Health, are performing research spanning a variety of areas and disciplines. These include biomechanics and ergonomics, safety, occupational disease, psychosocial issues, industrial relations, epidemiology, and toxicology.

Despite this activity, however, Ontario is substantially underinvesting in health, safety and compensation research when compared to other jurisdictions such as Quebec, the United States, the United Kingdom, Germany, and Sweden. Ontario research also suffers from the lack of a coherent strategy, a coordinated network and a central repository of information. Due largely to the absence of good needs assessment and priority-setting processes, there are substantial gaps in research in some areas, such as diagnosis and treatment of occupational disease, effects of exposure duration and job pace on injury and illness, and workplace management practices for successful health and safety performance.

Largely because of these gaps, research does not play the role it should in supporting good decision-making, nor is it fully utilized in planning effective solutions to workplace problems. Those involved in workplace health, safety, and compensation may not fully appreciate the value of research as an aid to decision-making or may not be aware of research findings that would help develop effective policies and programs.

6. What Will the Research Program be Like?

As described in section 1, the Task Force vision calls for a planned coordinated research strategy, research networks, quality standards, and enhanced research capacity. To achieve this vision, the Task Force believes that the WCB research program will need to have the following characteristics:

Research must be planned through a coherent strategy

A well-planned strategy is needed to make sure that the research program meets priority needs and uses resources cost-effectively. This requires several steps. First, there must be a process of needs identification and priority setting that involves input from stakeholders. Priorities must be set based on several considerations. One consideration is the importance of the issue or problem that the research will address. A second is whether research is needed to address the problem – not all problem need further research. A third consideration is the extent to which relevant research is being done elsewhere. It will also be necessary to consider the capacity and expertise of Ontario researchers to make a valuable contribution in a particular field of inquiry.

After setting priorities, a research agenda must be established through a coherent planning cycle. To use an economic analogy, this process will result in a "research portfolio," carefully selected to obtain the best returns for stakeholders. This approach will ensure investments across the spectrum of priority areas, to meet both long term and near term needs. In setting the research agenda, the WCB will need to effectively balance immediate requirements and long-term priorities.

The research program should leverage contributions from other partners

While the WCB expects to increase its investment in research, it will not satisfy all research needs on its own. The program should therefore be planned in a way that leverages contributions from other partners. These would not be limited to financial contributions, but would include other forms of participation by partners such as employers and their associations, labour organizations, other research and government institutions, other provincial agencies, Safe Workplace Associations, and educational organizations. For example, collaboration and shared funding can be encouraged through the use of matching funds, or through proposal evaluation criteria that give additional weight to projects with funding contributions from other sources.

Research must meet quality standards

Research supported by the WCB must satisfy accepted quality standards. This will require that research proposals and reports be subject to a fair and credible review process.

In academic circles, the term "peer review" is often used to connote such a process, which ensures that research meets accepted standards for the type of study and discipline. The Task Force believes that research supported by the WCB must satisfy peer review criteria. However, it defines such review broadly to include other stakeholders as well as experts in the research field of study. Reviewers may include users of research such as employers, workers, educators, Safe Workplace Associations, and other public organizations. Besides helping ensure quality, such reviewers can make sure that research meets priority needs and is relevant to workplace problems.

Research findings must be disseminated and used to solve problems and make changes

If research is to be used in the ways set out in the vision, it cannot remain "on the shelf." Research results must be disseminated so that they are used to create innovative solutions that will he applied to workplace problems throughout the province. Stakeholders will need to encourage the use of research findings and help ensure that the implications of research are understood by potential users. Researchers should work closely with other stakeholders to test workplace-based applications of research results.

There must be active research networks within the province and with other jurisdictions

Good research requires cross-fertilization through collaboration and information-sharing. Ontario will need to foster active networks throughout the province to promote these exchanges among the province's researchers.

Ontario researchers will also need to participate in national and international networks to collaborate on projects and share critical information. Such participation will help Ontario to be at the leading edge of research, and reap benefits from research carried out in other jurisdictions. The province's contribution to the international body of research will enable it to take a "seat" at the "international table."

7. Researchers and Research Organizations

Research will be performed by qualified researchers who may come from many organizations and backgrounds. Besides researchers in academic institutions and research institutes, they may include researchers and professionals in private sector firms and consulting companies, labour associations, and public organizations. Collaboration among such organizations will be encouraged.

The program will nurture the growth of research expertise and capacity in the province, by developing research experience and educational opportunities such as traineeships and scholarships. The Task Force believes that one important way to develop research capacity is by "fostering centres of excellence" in specified research areas such as, for example, ergonomics, occupational disease, and the integration of health and safety into workplace management. The areas in which Ontario will develop expertise must be selected strategically. This selection may be influenced by priority issues in health, safety and compensation, by gaps in research in other jurisdictions, or by existing advantages and expertise in the Ontario research community.

Research centres will be dispersed geographically. Without compromising quality, the program will endeavour to distribute research activity throughout the province. By encouraging research in teaching institutions, efforts will be made to enhance the teaching of health, safety and compensation issues in professional and academic curricula.

8. Types of Research to be Conducted

The research to be supported will address issues at the levels of system-wide policy, the workplace, and the individual. It will involve a variety of disciplines and cover diverse subject areas. These may include:

- ergonomics and job design
- best practices in health and safety management safety
- work relatedness in disease causation
- prevention and management of soft tissue injuries
- toxicology and occupational hygiene epidemiology
- diagnosis, treatment, and management of injury and disease
- economic impact of injury, illness and disease
- optimum return to work practices
- incentives for better performance
- technology development and testing.

All of these subject areas require multi-disciplinary study. In order to better organize the broad range of research contemplated, and foster networks among researchers with related interests, it is proposed that research areas be grouped into three broad domains, each of which will be the focus of an advisory committee (described in Section 9). The domains have been defined largely on the basis of common ground among the disciplines involved in their study – ground likely to prove fertile for the growth of research networks and collaboration. The three domains are:

a) Organizational and management research

This research will focus on how organizational and management policy, practices, and workplace culture affect health, safety, compensation, rehabilitation and return-to-work at the workplace and public policy levels. It will address issues involving public policy, workplace management practices, education and promotion, labour relations, organizational culture, and economic impacts. Examples of questions that may be addressed by research in this domain include:

- What management practices have been successful in workplaces that have achieved outstanding health and safety performance?
- What financial incentives or compensation policies will motivate good performance in health, safety, and return-to-work?
- What kind of participation by workplace parties in return-to-work and health and safety programs leads to improved outcomes?
- How successful are performance-based or prescriptive regulatory policies?
- What has been the impact of particular health and safety training programs on performance?
- What is the best way to help small business improve health and safety and return-to-work programs?

The research disciplines and fields of study involved in this domain generally fall within the social and behavioral sciences. They may include, for example, management science, sociology, psychology, economics, industrial relations, organizational studies, labour studies, education, social marketing, and public policy.

b) Workplace environment design research

This domain involves research related to the work environment and job characteristics, and their interface with workers. It will focus on investigating largely scientific and technical questions on workplace risks and hazards, their control, and how physical aspects of the workplace and work conditions affect health and safety and return-to-work. Examples of questions such research may address include:

- How can tools, job processes, and work spaces be re-designed to prevent repetitive strain injuries, or to accommodate an injured worker returning to work?
- What is the best design for protective equipment to prevent worker exposure to a particular hazard?
- What is the effect of technological innovation on workers' health?
- What is the impact of a particular machine design on worker injuries?
- What is the best way to measure worker exposure to a particular chemical or biomechanical hazard?
- What is the best way to measure physical job demands?

Researchers involved in this domain are generally from disciplines and professions related to the physical sciences, such as physics, chemistry, ergonomics, engineering, and occupational hygiene.

c) Biological and health care research

Research in this domain can be thought of as answering the general question: What happens to the human body when it is exposed to a hazard, and when we try to treat a resulting injury or illness? This research is concerned with biological, medical and health care aspects of injury and disease causation, and the diagnosis, treatment and rehabilitation of workplace injury and illness. It includes evaluation of health services and the effects of medical treatment of injured or ill workers. Research in this area will address questions such as:

- What are the effects on the body of a particular chemical?
- What are the physiological root causes of a particular disease and to what extent is it work-related?
- What is the biological or behavioral reaction to repeated lifting of a heavy object? •
- Does a particular rehabilitation therapy improve the long term outcome of an injury or illness?

Disciplines and professions involved in this domain may include epidemiology, toxicology, biomechanics, psychology, medical sciences, and health care professions.

In summary, these domains can be thought of as focusing, respectively, on public policy and workplace organizations, the physical workplace environment, and the individual or populations of workers. Many studies will transcend domain boundaries; it is important that these domains do not become silos that inhibit cross-fertilization among disciplines. Ensuring communications across the domains and avoiding restrictive categorization will be important functions of the structure and processes described in the next section.

9. The Framework for Managing the Research Program

Thoughtful design of advisory and administrative structures and processes for the research program is essential to realizing the research vision. The framework for managing the research process must be designed to elicit input from stakeholders, ensure a co-ordinated research strategy, motivate research in priority areas, build research capacity, and ensure research quality. It is also important that the program build partnerships with all participants in the research system and encourage cross-fertilization among disciplines. It must also foster partnerships between researchers and workplace parties who will use and benefit from research results. As well, it must successfully disseminate research findings and ensure as much as possible that research is translated into improved health and safety in the workplace.

Structure and Processes

The Task Force does not intend to elaborate the administrative design and process for the research program in great detail. Such details will be worked out by the WCB as it proceeds to develop and implement the program. However, to provide a general picture of how the research management process might be structured, the Task Force suggests several features of a research framework. A proposed design for this framework is depicted in the attached figure.

In order to ensure that the research agenda is coordinated with system-wide goals, decision-making on research strategy and priorities will be at the level of the Executive and Board of Directors of the WCB. Stakeholders will advise the WCB on directions and priorities through a Research Council. Membership of this Council would likely include leaders from industry, labour organizations, the WCB, the Ministry of Labour, SWAs, and research organizations.

Stakeholders will also be involved in the research process through three advisory committees, one for each of the research domains described above. These committees will have some cross-membership with, the Research Council as well as close links to research networks and centres of excellence in their research areas. Like the Research Council, their members will include leaders from industry, labour, government, research and delivery organizations. Compared to the Council, however, they will have relatively more participants from the research community. Their members will be knowledgeable about how research can help solve health, safety and compensation problems, and will have the expertise to translate needs into researchable questions.

The research advisory committees will provide input to the Research Council on research needs and priorities within their domains. They will also review and advise on research proposals, and help ensure dissemination of research results and their application to practical policies and programs.

The Task Force envisions that the WCB will manage the research process through a dedicated secretariat, which will provide administrative support to the Research Council and committees. The secretariat will also organize and synthesize stakeholder input on research needs, and co-ordinate review of proposals and interim reports. Its responsibilities will include administering research funds, and tracking and monitoring research projects. As well, the secretariat will recommend funding criteria and protocols, maintain inventories of current research in Ontario, and provide background information for needs assessment. The secretariat will have an important role in facilitating cross-fertilization and communication among all elements of the research system. It must also actively disseminate research findings to those who can use them, and encourage projects that test and apply research findings to practical solutions.

With the assistance of the advisory committees and the secretariat, the Research Council will recommend research priorities to the WCB Executive and Board of Directors. These priorities will be based on stakeholder needs, filtered through a process that translates these needs into researchable questions. In recommending priorities, the Council will take into account the potential impact of an issue, the need to prevent unnecessary duplication and complement research undertaken elsewhere, and research capacity and expertise within the province.

It is important that the needs identification process be proactive, and that the program actively reach out to the broad stakeholder community to seek input on needs and priorities. In determining these needs, the Research Council will work with stakeholders and the committees to identify pressing questions that research can help answer. The secretariat would then categorize these needs into the three research domains. The advisory committees would translate these needs into researchable questions, and provide advice to the Research Council on the potential contribution Ontario could make to research on these issues. On the basis of this input, the Research Council would recommend priorities to the WCB Executive and Board of Directors, which would set the research agenda for a specified time period.

The research agenda should be set in a way that balances immediate with longer term priorities so that urgent needs can be met without sacrificing long term goals. While much of the research contemplated will be on longer term priorities, the research system should also help the WCB and others meet shorter term research needs. The involvement of researchers in immediate issues will help build partnerships between the research community and those who can apply research results to public policy and workplace problems.

Funding Policy

The Task Force believes that the research program must build and sustain a limited number of networks and centres that can develop research capacity and maintain good communications among researchers. This will foster cross-fertilization and prevent duplication of effort. Therefore, the program will provide some core funding for research networks or centres of excellence specializing in selected research streams. Each stream would fall primarily within one of the three domains described in section 8. For example, the program could support a network on health and safety management practices within the Organizational and Management domain, an ergonomics network within the Workplace Environment Design domain, and an occupational disease network within the Biological and Health Care domain. There may be more than one network or research centre within a particular domain, and some networks or centres may cross domain boundaries.

Core funding may be used to help research networks or centres hold meetings or conferences, fund training of researchers, build in-house research capacity – e.g., through an academic "chair" in a particular subject – or purchase laboratory or computer equipment necessary for research. Core funding would also allow centres of excellence to conduct some research studies in their specified areas.

Core funding should account for only a minor portion of available funds; most funding will be project-based. Research projects on identified priorities may be contracted to a centre specializing in the research area, or proposals may be invited from the general research community.

Decisions on funding levels, criteria and distribution will be critical to carrying out the strategic goals for research. Some funding should be made available for knowledge-based research that may be outside the parameters of defined priorities. The WCB will need to decide on levels of funding for each research stream or priority, and the split between core and project-based funding. For example, 10%-15% of available funds could be designated for core funding of research networks or centres of excellence, 70%-75% for research projects on established priorities, 10%-15% for knowledge-based research outside of defined priorities, and 5%-10% for training of researchers. Funding criteria should be structured in a way that creates incentives for cost-sharing and contributions by other partners.

While funding decisions will rest with the WCB, the research advisory committees will review proposals and provide advice on specific projects and research initiatives. It is critical to the success of the entire program that the review process be credible, fair, and transparent. The advisory committees will normally refer proposals to external expert panels for review of their scientific merit. In addition to reporting to the WCB on the results of scientific review, the committees will also advise on the relevance of proposals to needs and priorities.

The Institute for Work and Health

The Institute for Work and Health will maintain its important role in the research system, and will participate actively in the research advisory process. It will continue to be supported as a major contributor to the body of health, safety and compensation research. The Institute will also be a focal point for building and maintaining research networks.

10. Conclusion

This proposal is intended to lay the groundwork for establishing the WCB research program. Clearly, much more work will be needed to elaborate details of how the program will work. The Task Force recommends that the WCB use this proposal as a basis to go forward in working out those details, in consultation and cooperation with the key stakeholder groups. As a first step, the WCB can share this proposal with interested parties and invite input on research needs and priorities.

11. Stakeholders